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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/771,276	02/04/2004	Stefaan De Bondt	016782-0299	2068

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WASHINGTON, DC 20007

EXAMINER
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GRAY, JILL M

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 01/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/771,276

**Applicant(s)**

DE BOND ET AL.

**Examiner**

Jill M. Gray

**Art Unit**

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-31,33-36 and 38-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-31,33-36 and 38-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/14/05</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-31, 33-36, and 38-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soens 4,664,971 in view of European Patent Publication abstract EP 0953651 B1 (Marandel '651) for reasons of record.

Soens discloses plastic articles, threads and grains for use in EMI shielding or antistatic plastic articles comprising a polymer matrix and stainless steel fibers having a diameter of more than 0.5 $\mu$ m, per claims 1, 31 and 36. See abstract, column 2, lines 20-25 and column 3, line 7. In addition, Soens teaches that the volume of fibers can vary between about 0.03% vol and about 0.5% vol as required by claims 4-8. See column 2, lines 58-59. It should be noted that Soens also teaches fiber plastics composites wherein the %vol of the resin is within applicant's range as set forth in claims 34 and 39. See column 3, lines 64-67. Also, Soens teaches plastic articles having a thickness within the range of applicant's claims 9-10 (column 2, lines 42-43) and grains having a length within the range as claimed in claims 40-41 (column 4, lines 22-24). The polymer matrix can be a thermoset polymer or thermoplastic polymer of the type contemplated by applicants in claims 12-14, 35, and 42. See column 5, lines 26-30 and claim 6. Further, Soens teaches plastic articles that have a shielding effectiveness

Art Unit: 1774

of at least about 25 dB, as required by claims 15-23. See column 2, lines 12-14. Soens does not teach the specific composition of his stainless steel fibers or that his fibers satisfy the relationship of claims 1, 3, 31, 33, 36, 38, and 46-49 nor bundled matrix, the fracture strength standard deviation or strain at fracture required by claims 24-30.

Marandel teaches in the abstract stainless steel fibers having a diameter within the range taught by Soens and as required by applicants, said stainless steel fibers having a composition comprising iron and C, Mn, Si, Ni, Cr, Mo, Cu, N, S, and P, each component present in the amount contemplated by applicants in claims 1, 31 and 36, further teaching that the fibers can be coated with a metal such as copper (per claims 29-30) and that said composition satisfies the relationship as required by claims 1, 3, 31, 33, 36, 38, and 46-49. In addition, Marandel teaches that his steel fibers have a strength of more than 2000Mpa as required by claim 26.

The use of stainless steel fibers in the formation of EMI shielding and antistatic plastic articles is well known in the art. The skilled artisan would have had a reasonable expectation of success of obtaining an EMI-shielding article with the incorporation of any stainless steel fibers known in the art as the conductive fibers of Soens. Though Soens is silent as to the specific stainless steel fibers used, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the stainless steel fibers of Soens, fibers of the type taught by Marandel, with the expectation of a known component functioning in it's known manner. As to claims 24-25 and 27-28, since the stainless steel fibers of Marandel are of the same type as applicants, the examiner has reason to believe that properties such as the fracture

Art Unit: 1774

strength standard deviation, strain at fracture standard deviation, strain at fracture, and diffusion at a depth of 100 nm are the same or similar to these properties contemplated by applicants. There is no factual evidence on this record to the contrary. Applicants are invited to provide such evidence. Regarding claim 11, this claim is drawn toward the size of the plastic article wherein changes in size ordinary are not a matter of invention in the absence of evidence to the contrary. Regarding claims 43-45, it would have been obvious to adjust and modify the reduction deformation during routine experimentation commensurate with the desired finess of the steel fibers.

Therefore, the combined teachings of Soens and Marandel '651 would have rendered obvious the invention as claimed in present claims 1, 3-31, 33-36, and 38-49.

1. Claims 1, 3-5, 9-11, 13, 15-17, 21-30, 36, and 38-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rivas 5,904,980 in view of European Patent Publication abstract EP 0953651 (Marandel '651) as applied above to claims 1, 3-31, 33-36, and 38-49.

Rivas discloses EMI and ESD reinforced plastic materials comprising polymers and additive such as stainless steel fibers, per claims 1 and 36. See abstract. In addition, Rivas discloses that the polymer can be present in approximately 95% to 85% and the additive is present in amounts of 5% to 15%, as required by claims 4-5 and 39. See column 1, lines 42-43. The polymer can be a thermoplastic as required by claim 13 and the article can have a thickness within the ranges set forth by applicants in claims 9-10 and 40-41. See Example 1. Furthermore, the formations of Rivas have an EMI shielding effectiveness at or above 35 decibels, as required by claims 15-17 and 21-23.

Art Unit: 1774

See column 6, lines 2-6. Rivas does not teach the specific composition of his stainless steel fibers or that his fibers satisfy the relationship of claims 1, 3, 30, 33, 36, 38, and 46-49, nor bundled matrix, the fracture strength standard deviation or strain at fracture required by claims 24-30.

Marandel, as set forth above, teaches in the abstract stainless steel fibers having a diameter within the range taught by Rivas and as required by applicants, said stainless steel fibers having a composition comprising iron and C, Mn, Si, Ni, Cr, Mo, Cu, N, S, and P, each component present in the amount contemplated by applicants in claims 1, 31 and 36, further teaching that the fibers can be coated with a metal such as copper (per claims 29-30) and that said composition satisfies the relationship as required by claims 1, 3, 31, 33, 36, 38 and 46-49. In addition, Marandel teaches that his steel fibers have a strength of more than 2000MPa as required by claim 26.

The use of stainless steel fibers in the formation of EMI shielding and antistatic plastic articles is well known in the art. The skilled artisan would have had a reasonable expectation of success of obtaining an EMI-shielding article with the incorporation of any stainless steel fibers known in the art as the conductive fibers of Rivas. Though Rivas is silent as to the specific stainless steel fibers used, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the stainless steel fibers of Rivas, fibers of the type taught by Marandel, with the expectation of a known component functioning in its known manner. As to claims 24-25 and 27-28, since the stainless steel fibers of Marandel are of the same type as applicants, the examiner has reason to believe that properties such as the fracture

Art Unit: 1774

strength standard deviation, strain at fracture standard deviation, strain at fracture, and diffusion at a depth of 100 nm are the same or similar to these properties contemplated by applicants. There is no factual evidence on this record to the contrary. Applicants are invited to provide such evidence. Regarding claim 11, this claim is drawn toward the size of the plastic article wherein changes in size ordinary are not a matter of invention in the absence of evidence to the contrary. Regarding claims 43-45, it would have been obvious to adjust and modify the reduction deformation during routine experimentation commensurate with the desired finess of the steel fibers.

Therefore the combined teachings of Rivas and Marandel would have rendered obvious the invention as claimed in present claims 1, 3-5, 9-11, 13, 15-17, 21-30, and 36, 38-49.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, 3-31, 33-36, and 37-49 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a plastic article comprising an ESD layer or EMI shielding layer, does not reasonably provide enablement for a plastic articles comprising as least one of an ESD layer *and* EMI shielding layer. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. More specifically, the specification as

Art Unit: 1774

originally filed does not disclose a plastic article comprising both ESD and EMI shielding layers rather the specification only discloses these layers in the alternative.

Accordingly, the specification is not commensurate in scope with the claims.

### ***Response to Arguments***

4. Applicant's arguments filed November 21, 2005 have been fully considered but they are not persuasive.

Applicants argue that EP 0953651 does not disclose, teach or suggest that the stainless steel wire is "obtained by the bundled drawing of stainless steel wires" as recited by claim 1.

In this concern, this language is drawn to a process limitation in a product claim, wherein process limitations add no patentable weight to the product, in the absence of clear factual evidence to the contrary.

Applicants argue that EP 0953651 discloses a stainless steel that satisfies the relationship of JM with a value of  $-55$  to  $-30$ , and therefore does not disclose a stainless steel composition that satisfies the relationship of MI, with a value of MI being less than  $-55$ , nor does the Office provide a basis or motivation for why one of skill in the art would have found it obvious to modify the compositions of EP 0953651 to satisfy the instant claimed relationship.

In this concern, it is the examiner's position that the MI of  $-55$  is close enough to the claimed MI that one of ordinary skill in the art would have expected the prior art and the present invention to have the same or similar properties.



Art Unit: 1774

Applicants argue that EP 0953651 does not disclose, teach or suggest that the stainless steel wire may be used with a thread or grain as recited by claims 31 and 36.

In this concern, the examiner has relied upon the teachings of Soens to show that grains and threads were known in the art at the time the invention was made.

Applicants argue that EP 0953651 does not disclose, teach or suggest a composition that undergoes a deformation  $\epsilon$  of at least 4.5 or has a MI value that permits a reduction in deformation of at least 4.5.

In this concern, as set forth previously, it would have been obvious to determine the reduction in deformation during routine experimentation.

No claims are allowed.

### ***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 1774

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jill M. Gray whose telephone number is 571-272-1524. The examiner can normally be reached on M-Th and alternate Fridays 10:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Jill M. Gray  
Primary Examiner  
Art Unit 1774

jmg